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### Model 218 Temperature Monitor

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#### Input Specifications

	Sensor Temperature Coefficient	Input Range	Excitation Current	Display Resolution	Measurement Resolution	Electronic Accuracy
<b>Diode</b>	negative	0 V to 2.5 V	10 $\mu$ A $\pm$ 0.05% <sup>9</sup>	100 $\mu$ V	20 $\mu$ V	$\pm$ 160 $\mu$ V $\pm$ 0.01% of rdg
	negative	0 V to 7.5 V	10 $\mu$ A $\pm$ 0.01% <sup>9</sup>	100 $\mu$ V	20 $\mu$ V	$\pm$ 160 $\mu$ V $\pm$ 0.02% of rdg
<b>PTC RTD</b>	positive	0 W to 250 W	1 mA $\pm$ 0.3% <sup>10</sup>	10 mW	2 mW	$\pm$ 0.004 W $\pm$ 0.02% of rdg
	positive	0 W to 500 W	1 mA $\pm$ 0.3% <sup>10</sup>	10 mW	2 mW	$\pm$ 0.004 W $\pm$ 0.02% of rdg
	positive	0 W to 5000 W	1 mA $\pm$ 0.3% <sup>10</sup>	100 mW	20 mW	$\pm$ 0.06 W $\pm$ 0.04% of rdg
<b>NTC RTD</b>	negative	0 W to 7500 W	10 $\mu$ A $\pm$ 0.01% <sup>9</sup>	100 mW	50 mW	$\pm$ 0.1 W $\pm$ 0.04% of rdg

<sup>9</sup> Current source error has negligible effect on measurement accuracy<sup>10</sup> Current source error is removed during calibration

#### Thermometry

<b>Number of inputs</b>	8
<b>Input configuration</b>	Inputs separated into two groups of four (each group must be the same sensor type) – inputs can be configured from the front panel to accept any of the supported input types
<b>Input accuracy</b>	Sensor dependent – refer to Input Specifications table
<b>Measurement resolution</b>	Sensor dependent – refer to Input Specifications table
<b>Maximum update rate</b>	16 reading per s total
<b>User curves</b>	Room for 8 (1 per unit) 200-point CalCurves™ or user curves
<b>SoftCal™</b>	Improves accuracy of DT-470 diode to $\pm$ 0.25 K from 30 K to 375 K; improves accuracy of platinum RTDs to $\pm$ 0.25 K from 70 K to 325; stored as user curves
<b>Math</b>	Maximum, minimum, and linear equation (Mx + B) or M(x + B)
<b>Filter</b>	Averages 2 to 64 input readings

#### Sensor Input Configuration

	Diode/RTD
<b>Measurement type</b>	4-lead differential
<b>Excitation</b>	8 constant current sources
<b>Supported sensors</b>	<b>Diodes:</b> Silicon, GaAlAs <b>RTDs:</b> 100 W Platinum, 1000 W Platinum, Germanium, Carbon-Glass, Cernox™, and Rox™
<b>Standard curves</b>	DT-470, DT-500D, DT-670, CTI-C, PT-100, and PT-1000
<b>Input connector</b>	25-pin D-sub

#### Front Panel

<b>Display</b>	4 line by 20 character backlit LCD display
<b>Number of reading displays</b>	1 to 8
<b>Display units</b>	K, °C, V, and W
<b>Reading source</b>	Temperature, sensor units, max, min, and linear equation
<b>Display update rate</b>	All displayed inputs twice in 1 s
<b>Temp display resolution</b>	0.001° from 0° to 99.999°, 0.01° from 100° to 999.99°, 0.1° above 1000°
<b>Sensor units display resolution</b>	Sensor dependent to 5 digits
<b>Display annunciators</b>	Remote operation, alarm, data logging, max, min, and linear

#### Interface

##### IEEE-488.2 interface (218S)

<b>Features</b>	SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT0, C0, E1
<b>Reading rate</b>	To 16 readings per s
<b>Software support</b>	LABVIEW™ driver

##### Serial interface

<b>Electrical format</b>	RS-232C
<b>Max baud rate</b>	9600 baud
<b>Connector</b>	9-pin D-sub
<b>Reading rate</b>	To 16 readings per s (at 9600 baud)
<b>Printer capability</b>	Support for serial printer through serial interface port used with data log parameters

##### Alarms

<b>Number</b>	16: high and low for each input
<b>Data source</b>	Temperature, sensor units, and linear equation
<b>Settings</b>	Source, high setpoint, low setpoint, deadband, latching or non-latching, and audible on/off
<b>Actuators</b>	Display annunciator, beeper, and relays (218S)

##### Relays (218S)

<b>Number</b>	8
<b>Contacts</b>	Normally open (NO), normally closed (NC), and common (C)
<b>Contact rating</b>	30 VDC at 5 A
<b>Operation</b>	Each input may be configured to activate any or all of the eight relays - relays may be activated on high, low, or both alarms for any input, or manually
<b>Connector</b>	Detachable terminal block

##### Analog voltage output (218S)

<b>Number</b>	2
<b>Scale</b>	User Selected
<b>Update rate</b>	To 16 readings per s
<b>Data source</b>	Temperature, sensor units, and linear equation
<b>Range</b>	$\pm$ 10 V
<b>Resolution</b>	1.25 mV
<b>Accuracy</b>	$\pm$ 2.5 mV
<b>Min load resistance</b>	1 kW (short-circuit protected)

##### Data logging

<b>Channels</b>	1 to 8
<b>Operation</b>	Data log records can be stored in memory or sent to the printer; stored data may be displayed, printed, or retrieved by computer interface

**Keypad** Membrane keypad, 20-key, numeric and specific functions

**Front panel features** Front panel curve entry and keypad lock-out

**Data memory** Maximum of 1500 single reading records, non-volatile

#### General

**Ambient temperature** 15 °C to 35 °C at rated accuracy, 10 °C to 40 °C at reduced accuracy

**Power requirement** 100, 120, 220, 240 VAC, (+6%, -10%), 50 or 60 Hz, 18 VA

**Size** 216 mm W × 89 mm H × 318 mm D (8.5 in × 3.5 in × 12.5 in), half rack

**Weight** 3 kg (6.6 lb)

**Approval** CE mark

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